

## Mood and persuasion: affective states influence the processing of persuasive communications

Schwarz, Norbert; Bless, Herbert; Bohner, Gerd

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Mood and Persuasion:  
Affective States Influence the Processing of  
Persuasive Communications

Norbert Schwarz, Herbert Bless, Gerd Bohner

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Zentrum für Umfragen, Methoden und  
Analysen e.V. (ZUMA)  
Postfach 12 21 55  
D-6800 Mannheim 1



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# **MOOD AND PERSUASION: AFFECTIVE STATES INFLUENCE THE PROCESSING OF PERSUASIVE COMMUNICATIONS**

**Norbert Schwarz**

**Herbert Bless**

**Gerd Bohner**

## **1. Introduction**

Attempts to persuade another person are often accompanied by efforts to change this person's mood. From little kids who say nice things to Daddy before they ask him a favor, to professionals in the advertising business who create funny and entertaining television spots to persuade consumers, we are all familiar with persuasion strategies that include attempts to change the recipient's mood. The frequent use of this persuasion strategy, and practitioners' faith in it, suggests that it may actually be effective. However, the exact mechanisms by which recipients' affective states may mediate persuasion processes are not yet well understood. In the present article, we shall outline different mediating processes that are consistent with current theorizing on the interplay of emotion and cognition, and shall evaluate these assumptions in the light of the available evidence.

In line with current theorizing on persuasion, we shall present our arguments in the context of the "cognitive response" approach to persuasion and attitude change (Greenwald, 1968; Petty, Ostrom, & Brock, 1981). According to this approach, recipients of a persuasive communication may arrive at an attitude judgment by one of two ways. On the one hand, they may carefully consider the content of the message, paying close attention to the implications of the presented arguments. On the other hand, recipients may not engage in a thorough consideration of message content, but may rely on simple cues, such as the communicator's prestige or likableness. While the former, content-oriented, processing strategy is known as "systematic processing" (Chaiken, 1980, 1987), or

the "central route to persuasion" (Petty and Cacioppo, 1986a, 1986b), the latter strategy is known as "heuristic processing," or the "peripheral route to persuasion."

If a central route of persuasion is traveled, or—in other terms—the message is processed systematically, the resulting attitude change is a function of the recipients' cognitive responses to the message: the more thoughts come to mind that support the position advocated in the message, the more pronounced the intended attitude change will be. Accordingly, messages that present strong arguments are more effective than messages that present weak or flawed arguments. The quality of the message affects attitude change less, however, if the peripheral route is traveled, or—in other terms—the message is processed heuristically. Accordingly, comparisons of the impact of strong and weak arguments are a key criterion in distinguishing between a central, or systematic, and a peripheral, or heuristic, route to persuasion, and we shall draw heavily on this criterion in the remainder of this article.

Which route to persuasion is more likely to be used depends on recipients' motivation and ability. If the recipient is sufficiently motivated and able to process the content of the message, the central route is likely to predominate. The peripheral route, on the other hand, is likely to be used if motivation and/or ability are low.

Current theorizing on the interplay of affect and cognition suggests at least five ways in which recipients' mood may influence persuasion processes within this general framework (see also Petty, Cacioppo, & Kasmer, 1988). Each of these possibilities has different implications for recipients' attitude change, their cognitive responses to the message, and their evaluation of the presented arguments, as will be outlined below. Moreover, the various assumptions differ in the processing stages at which they hypothesize affective states to have an impact. Some assumptions imply an impact of affective states on the encoding of the persuasive message, whereas others imply an impact of affective states at the judgment stage. In the former case, mood effects should be obtained only if the mood is present at the time of exposure to the message; in the latter case, they should be obtained only if the mood is present at the time of judgment. We shall first discuss these different process assumptions and then review data that bear on them.

## II. Theoretical Approaches to Mood and Persuasion

### A. MOOD AS A PERIPHERAL CUE HYPOTHESIS

Recipients' affective state may itself serve as a peripheral cue if it becomes associated with the attitude object or with the source. This prediction has a long

tradition in learning theory approaches to attitude change (Berkowitz & Knurek, 1969; Razran, 1940; A. W. Staats & C. K. Staats, 1958; Staats, Staats, & Crawford, 1962; C. K. Staats & A. W. Staats, 1957; Zanna, Kiesler, & Pilkonis, 1970). Within the learning theory framework, a number of studies used a first order classical conditioning approach by repeatedly pairing word stimuli with pleasant or unpleasant experiences, such as the offset vs. onset of electric shock (Zanna *et al.*, 1970), music (e.g., Gorn, 1982), or food (e.g., Dabbs & Janis, 1965). In other studies, higher order conditioning procedures were employed, pairing concepts or nonsense syllables with words that have positive or negative evaluative meaning (e.g., Staats & Staats, 1958).

In both paradigms, it could be demonstrated that subjects expressed more positive (or negative, respectively) attitudes toward concepts that had repeatedly been paired with positive (negative) stimuli. Moreover, the induced attitudes generalized to semantically or categorically similar attitude objects (Berkowitz & Knurek, 1969; Zanna *et al.*, 1970). While some of the earlier studies (A. W. Staats & C. K. Staats, 1958; C. K. Staats & A. W. Staats, 1957) are open to criticism concerning demand characteristics inherent in the experimental procedures (cf. Page, 1969), this is not the case for the Berkowitz and Knurek (1969) and Zanna *et al.* (1970) studies, as these authors used elaborate cover stories and separated the conditioning procedure from the attitude assessment.

Thus, the available evidence suggests that attitudes toward verbal concepts can be formed while these concepts are paired with unpleasant or pleasant experiences. Within an information-processing framework, these effects can be interpreted as effects of affective states serving as a peripheral cue. However, it is yet unclear if cue effects of this kind do occur in a *persuasion* setting, when a complex message is presented while recipients are in a positive or negative affective state, or if they are restricted to situations in which little, if any, content information is available. Moreover, most of the support for the classical conditioning model of attitudes comes from studies in which previously *neutral* or new attitude objects were presented, whereas attitudes toward stimuli that were already positive or negative to begin with seem to be unaffected (e.g., Zanna *et al.*, 1970).

Similar predictions may be derived from the assumption that affective states may serve informative functions. According to this hypothesis (Schwarz, 1987, 1988, 1990; Schwarz & Clore, 1983, 1988), individuals may simplify complex judgmental tasks by using their affective reaction to the attitude object as an informational basis according to a "How do I feel about it?" heuristic. In doing so, however, it is difficult to distinguish between one's affective reaction to the object of judgment and one's preexisting mood state. Accordingly, individuals may mistake their preexisting feelings as a reaction to the message, which may result in more favorable evaluations under good than under bad mood.

Note, however, that individuals will rely on their affective state as a basis of judgment only if its diagnostic value for the judgment at hand has not been called

into question. In line with this assumption, Schwarz and Clore (1983) observed that individuals evaluated their life more positively when interviewed on sunny rather than rainy days, reflecting their mood at the time of judgment. However, when their attention was drawn to the weather as a potential source of their current mood, its impact was eliminated. Specifically, respondents called on rainy days reported being as happy and satisfied with their life as respondents called on sunny days, when the interviewer, who pretended to call from out of town, opened the interview with a private aside, "How's the weather down there?" This manipulation presumably directed respondents' attention to the weather, suggesting that their current feelings may be due to this transitory influence, and may thus not provide a diagnostic basis of information for evaluating the overall quality of their life. Accordingly, a measure of current mood, assessed at the end of the interview, was correlated with judgments of life satisfaction only if respondents' attention was not drawn to the weather. This and related research (see Schwarz, 1990; Schwarz & Clore, 1988, for reviews) suggests that recipients of a persuasive communication may use their feelings at the time of judgment as a peripheral cue only if their informational value has not been called into question.

In summary, both the learning theory and the "mood-as-information" variant of the hypothesis, that moods may serve as peripheral cues, imply that mood effects on attitude change should be obtained primarily if a peripheral route to persuasion is traveled, but should be weak if a central route is traveled. Accordingly, they predict a main effect of mood on attitude change, which should be independent of the quality of the presented arguments. Moreover, both notions do not predict effects of mood on message-related cognitive responses or recall. Both notions differ, however, with regard to the processing stage at which the impact is supposed to occur. Whereas the mood-as-information hypothesis assumes that an impact of affective states reflects respondents' feelings at the time of judgment, independently of what evoked these feelings in the first place, this is not the case for the learning theory approaches. Specifically, the classical conditioning approach requires that the attitude object and affectively laden stimuli be paired at the encoding stage, whereas an instrumental conditioning approach requires that previous related attitude judgments be paired with affective consequences (e.g., Cialdini & Insko, 1969). All of these assumptions, however, have received most support in research on the formation of new attitudes, rather than in research on attitude change.

## B. MOOD CONGRUENCY HYPOTHESIS

As a second hypothesis, one may assume that recipients' mood states may influence the associations generated during exposure to the message, due to the



increased accessibility of mood congruent material stored in memory (Bower, 1981; Isen, Shaker, Clark, & Karp, 1978; see Blaney, 1986, for a review). This may result either in more positive elaborations of the content of the message, or in more positive reactions to peripheral cues, such as the appearance of the communicator, when recipients are in a good rather than bad mood. Accordingly, the mood congruent recall hypothesis predicts a main effect of mood on attitude measures, with greater persuasion under good than under bad moods. However, this main effect on attitude measures may or may not be paralleled by effects of mood on cognitive responses, depending on whether the mood congruent associations pertained to the content of the message or to peripheral cues. According to this model, the impact of mood states may occur at the encoding stage, that is, when the message is elaborated, or at the judgment stage, if the judgment is based on what can be recalled from a previously encoded message. In either case, the model holds that the impact of mood is independent of the source to which one's mood is attributed (cf. Schwarz & Clore, 1988).

### C. CHANGE IN CRITERIA HYPOTHESIS

As a third possibility, subjects' affective state may influence the criteria that they use to evaluate the quality of the message. Specifically, it seems plausible to suppose that subjects in a bad mood may use harsher criteria to evaluate a persuasive message than subjects in a good mood. If so, subjects in a bad mood should evaluate the message less favorably and should show less attitude change than subjects in a good mood. This would imply a main effect of mood on both attitude change and the relative number of supportive and refutational cognitive responses that is independent of the quality of the presented arguments. An interaction prediction could only be derived if one assumed that mood affects recipients' threshold for the acceptability of an argument, and that all arguments above or below the threshold are treated equally, without further consideration of their absolute level of plausibility. In that case, individuals in a negative mood may be receptive of strong arguments and dismissive of weak arguments, whereas individuals in a positive mood may be equally receptive to strong and weak arguments, reflecting a lower threshold. In either case, the change-in-criteria hypothesis implies that mood effects should only be observed when the mood is present at the time of exposure to the message.

### D. MOTIVATIONAL HYPOTHESES

Fourth, recipients' affective state may influence their motivation to elaborate on the content of the message. In this regard, it has been hypothesized that

moods may affect individuals' preferred processing style, and that persons in a good mood are more likely to engage in simplified, heuristic processing strategies, whereas persons in a bad mood may spontaneously engage in more effortful and detail-oriented analytic processing strategies (Schwarz, 1990; see also Fiedler, 1988; Isen, 1987; Kuhl, 1983, for related hypotheses). This prediction is derived from the assumption that "emotions exist for the sake of signaling states of the world that have to be responded to, or that no longer need response and action" (Frijda, 1988, p. 354).

If so, negative feelings may inform individuals that their current situation is problematic. They may therefore trigger processing styles that are adequate for analyzing the problematic situation in order to determine adequate reactions. However, any mechanism that increases the accessibility of relevant procedural knowledge may also increase the likelihood that the respective procedures will be applied to other tasks to which they are applicable while the individual is in a negative affective state. Moreover, individuals in a negative state may be motivated to avoid erroneous decisions in a situation that is already characterized as problematic. Consistent with this assumption, a large body of literature indicates that individuals are more likely to use effortful, detail-oriented, analytical processing strategies spontaneously when they are put in a bad rather than in a good mood (see Schwarz, 1990, for a review).

Positive affective states, on the other hand, inform individuals that their current environment is a safe place. Accordingly, individuals in a good mood may be more likely to take risks and to use simple heuristics in information processing. Moreover, they may have better access to a variety of different procedural knowledge, given that no specific procedure is activated to cope with the current situation. In combination, this may facilitate the higher creativity that has been observed under elated mood, but may inhibit the spontaneous use of effortful analytic processing strategies, unless they are required by other active goals. Again, a considerable body of research supports this assumption (see Schwarz, 1990, for a review).

In a related vein, Isen and colleagues (Isen, 1984; Isen & Levin, 1972; Isen, Means, Patrick, & Nowicki, 1982) suggested that individuals in a good mood may avoid cognitive effort that could interfere with their ability to maintain their pleasant affective state. If so, persons in a good mood may be unlikely to elaborate the message for that reason. The prediction of a more analytic reasoning style under bad mood, on the other hand, is more controversial. Severely depressed states have also been found to accompany decreased motivation (e.g., Beck, 1967; Peterson & Seligman, 1984) and may thus decrease the likelihood of message elaboration. Moreover, negative events, which trigger negative moods, may attract a high degree of attention, thus limiting the cognitive capacity that individuals have available for working on other tasks, as will be discussed

below. Note, however, that experimentally induced moods are usually not very severe, rendering a depression-like decrease in motivation unlikely.

In combination, these considerations suggest that analytic elaborations of the quality of persuasive arguments may be more likely when recipients are in a bad rather than a good mood at the time of exposure to the message. In contrast to the preceding hypotheses, this notion predicts an interaction effect of mood and argument quality, rather than a main effect of mood. Specifically, recipients of a persuasive message that presents *strong arguments* should be more persuaded when they are in a bad, rather than in a good mood. On the other hand, recipients of a message that presents *weak arguments* should be more persuaded when they are in a good, rather than in a bad mood. Moreover, this interaction of mood and message quality should be obtained on attitude change measures as well as on measures of recipients' cognitive responses, reflecting the impact of mood on message elaboration.

In addition, the motivational hypothesis results in different predictions for different processing stages, an issue to which we shall later return in more detail.

#### E. COGNITIVE CAPACITY HYPOTHESES

As a fifth hypothesis, affective states may influence recipients' ability to elaborate the message in various ways. Specifically, the presence of mood-related thoughts may decrease subjects' information-processing capacity and may thus interfere with their ability to elaborate the message. However, it is unclear whether good moods or bad moods are more likely to have this interference effect.

On the one hand, it has been suggested that positive mood increases the accessibility of positive material, which is assumed to be more extensive and more interrelated in memory (Isen *et al.*, 1982; Matlin & Stang, 1979). Thus positive mood could potentially elicit a great number of positive thoughts. Many of these thoughts may not be relevant for the processing of the persuasive communication and may thus reduce the capacity for the processing of this message.

On the other hand, negative events that elicit bad moods may be more likely to stimulate a search for explanations (e.g., Abele, 1985; Bohner, Bless, Schwarz, & Strack, 1988; Schwarz, 1987; Schwarz & Clore, 1983), and this may also interfere with the performance of other tasks. Note, however, that such an interference may be less likely in experiments than in natural situations, because the introduced negative event has limited implications and can usually not be changed, thus limiting the necessity and adaptive value of extensive event-related analyses. Similarly, Ellis and Ashbrook's (1988) resource allocation

model holds that depressed states may decrease individuals' cognitive capacity, and this assumption is well supported by memory research (see Ellis & Ashbrook, 1988, for a review).

Finally, affective states may influence an individual's arousal level, which in turn has been shown to have curvilinear effects on cognitive capacity (Kahneman, 1970). Because this latter possibility pertains to the intensity rather than the valence of affective states, however, it will not be considered in detail.

In general, the cognitive capacity hypotheses predict an interaction of affective state and message quality, as do the motivational hypotheses. Specifically, individuals whose cognitive capacity is reduced by their current affective state should be less persuaded by strong arguments, and more persuaded by weak arguments, than individuals whose cognitive capacity is not affected. Moreover, this interaction should be obtained on measures of attitude change as well as on measures of recipients' cognitive responses, reflecting the impact of cognitive capacity on message elaboration. However, whether being in a good or a bad mood is more likely to reduce individuals' cognitive capacity remains an open issue. Finally, like the motivational hypotheses, the capacity hypotheses result in different predictions at different processing stages, as will be discussed later.

The fact that the capacity and motivational hypotheses generate potentially identical predictions raises the question of how the two may be distinguished. It seems that a mood-induced lack of motivation to engage in effortful analyses of the content of the message may be overridden by other attempts to motivate recipients to pay attention to the quality of the message presented to them. Such attempts should show little effect, however, if recipients do not have the required cognitive capacity at their disposal. Conversely, giving recipients sufficient time to process the content of a message despite restricted cognitive capacity may overcome the impact of limited capacity, but may show little effect if individuals are not motivated to engage in effortful processing strategies. We shall later return to this issue in more detail.

Let us now review experimental findings that bear on the impact of recipients' mood at the time of exposure to a persuasive communication.

### **III. Mood at Exposure and the Processing of Persuasive Messages**

#### **A. IS THERE AN INFLUENCE?**

To begin with a real world illustration, suppose that you want to use a public telephone. But before you can place your call, you are approached by a person who asks you to let him make his own call first. Would you be more likely to

comply with this request if you were in a good rather than in a bad mood? Probably yes, as a considerable number of studies on mood and helping behavior suggest (see Isen, 1984; Schaller & Cialdini, in press, for reviews). But more germane to the present issue is the following: Would the quality of this fellow's excuse make more of a difference when you are in a good mood or when you are in a bad mood?

To explore this issue, Böhner (1988) conducted a field experiment with 52 users of a public telephone in a German city. Half of the subjects happened to find a one-deutsche mark (DM) coin in the telephone booth, equivalent to half a United States dollar, while the others did not. Pretests demonstrated that finding a coin did improve subjects' current mood.

In the main experiment, subjects were approached by a confederate who asked them for permission to advance in line and to make her own call first. This was done after subjects had or had not found a coin, but before they could place their telephone call. For half of the subjects, the confederate provided a reasonable excuse, by informing the subject that she had to contact her boss, who would only be in his office for another 5 minutes. For the other half, the confederate's request was not accompanied by a plausible reason.

Overall, subjects' mood did not influence their compliance. While 63% of the good-mood subjects complied with the confederate's request, the same was true for 66% of the control group subjects. Thus, no main effect of mood was obtained. On the other hand, subjects were twice as likely to comply with the confederate's request when a plausible reason was given (85%) than when it was not (44.5%). This latter finding, however, depended on subjects' mood. Specifically, 39% of the control group subjects, who did *not* find a coin, complied with the request without receiving a plausible reason, whereas 92% complied when a reason was provided. Good-mood subjects, on the other hand, who *did* find a coin, were not significantly affected by the quality of the excuse. They complied with the request independently of whether it was accompanied by a plausible reason (75%) or not (50%). Although this pattern did not result in a significant interaction, the simple main effect of type of excuse was significant for subjects in a neutral mood, but insignificant for subjects in a positive mood. Thus the findings of this field experiment suggest that subjects in a good mood may be less likely to pay attention to the quality of a request than subjects in a nonmanipulated mood.

A related laboratory experiment (Bless, Böhner, Schwarz, & Strack, 1990) provides more systematic insight into the impact of *good* and *bad* moods on recipients' processing of persuasive counterattitudinal communications that present *strong* or *weak* arguments. Subjects were 87 female students at a German university. To induce a good or bad mood, subjects were first asked to provide a vivid report of a pleasant or an unpleasant life event, purportedly to help with the construction of a "Heidelberg Life-Event Inventory." They were encouraged to

relive the event in their mind's eye, and to provide a vivid description of the event and the feelings that accompanied it. Subjects were given 15 minutes to complete their report. This procedure resulted in a reliable difference on a manipulation check ("How do you feel right now, at this very moment?," 1 = "very bad" and 9 = "very good";  $M = 7.0$  for the positive, and 6.1 for the negative event conditions, respectively).

As part of a purportedly independent second study, subjects were subsequently exposed to a tape-recorded communication that presented either strong or weak arguments in favor of an increase in student services fees. Some of the subjects were informed that this second study was concerned with language comprehension, whereas others were told that the study was concerned with the evaluation of persuasive arguments. To provide an attitude baseline, a nonfactorial control condition was included, in which subjects were neither exposed to a mood manipulation nor to a persuasive message, but only reported their attitude toward an increase in student services fees.

For the time being, we will restrict our discussion to the language comprehension conditions because these conditions are most relevant to the impact of mood states on subjects' *spontaneous* processing of persuasive messages. We shall later return to the impact of moods under conditions where subjects are explicitly instructed to pay attention to message quality. After listening to one of the taped messages, subjects' attitudes toward an increase in student services fees, their cognitive responses to the message, their memory for the message's content, and their evaluation of the message were assessed.

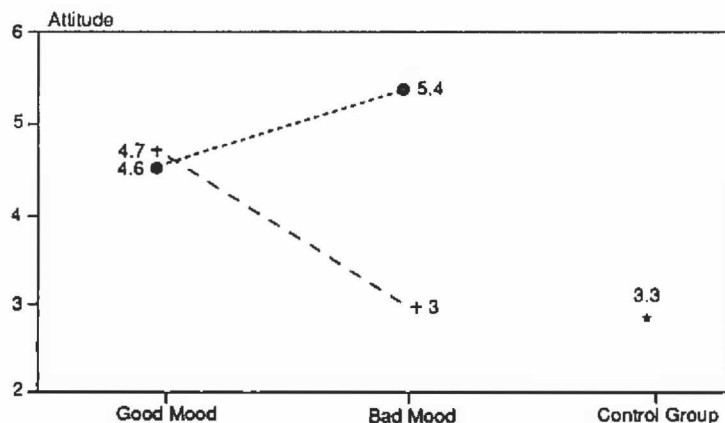


Fig. 1. Attitude change as function of mood and message quality. (•····•), Strong message quality; (+---+), weak message quality. Adapted from Bless, Bohner, Schwarz, and Strack (1990, Experiment 1).

As shown in Fig. 1, subjects in a bad mood reported more favorable attitudes toward an increase in student services fees when they were exposed to strong arguments than when they were exposed to weak arguments (see Table 1, presented below, for the significance of comparisons between individual means). Subjects in a good mood, on the other hand, were equally persuaded by strong and by weak arguments, and showed moderately positive attitude change, irrespective of the quality of the arguments. This suggests that subjects in a good mood may have been less likely to elaborate the specific content of the message than subjects who were in a bad mood.

This conclusion is supported by an analysis of subjects' cognitive responses. Specifically, subjects in a bad mood reported a higher proportion of favorable thoughts in response to strong rather than weak arguments, as shown in the top panel of Fig. 2. Similarly, they reported a higher proportion of unfavorable thoughts in response to weak rather than strong arguments, as shown in the bottom panel of Fig. 2. Thus, the cognitive responses of subjects in a bad mood reflect systematic elaboration of message content. Not so, however, for subjects in a good mood. Neither the proportion of favorable, nor the proportion of unfavorable, thoughts reported by these subjects differed as a function of argument strength, indicating a low degree of systematic message elaboration.<sup>1</sup>

Nevertheless, when subjects were subsequently asked to rate the quality of the presented arguments, these ratings were unaffected by their affective state. Rather, subjects in a good as well as in a bad mood rated the weak arguments as less convincing ( $M = 3.5$ ) than the strong arguments ( $M = 6.0$ , along a scale of 1 = not strong at all to 9 = very strong), with no indication of a mood effect whatsoever (all  $F$  values  $< 1$ ). This suggests that subjects in a good mood did note the quality of the arguments, at least when explicitly asked, but did not spontaneously consider it in making their attitude judgments.

Conceptually equivalent findings were obtained in a number of other studies, which will be reviewed shortly, all indicating that the observed interaction of mood and argument strength on measures of attitude change and cognitive responses is a robust and reliably replicable finding (Bless *et al.*, 1990, Experiment 2; Bless, Mackie, & Schwarz, in press; Innes & Ahrens, in press; Mackie & Worth, 1989; Worth & Mackie, 1987). In combination, these results support the hypothesis that the impact of mood on persuasion is mediated by its impact on subjects' processing strategies. While subjects in a bad (Bless *et al.*, 1990, 1991) or in a nonmanipulated mood (Innes & Ahrens, in press, Experiment 2; Mackie & Worth, 1989; Worth & Mackie, 1987) spontaneously elaborated the content of the message according to a central route of persuasion, subjects in a good mood

<sup>1</sup>The absolute number of cognitive responses reported by subjects was not affected by the manipulations, and about one-third of the responses were coded as "neutral" or "irrelevant" thoughts (see Bless *et al.*, 1990, for details).

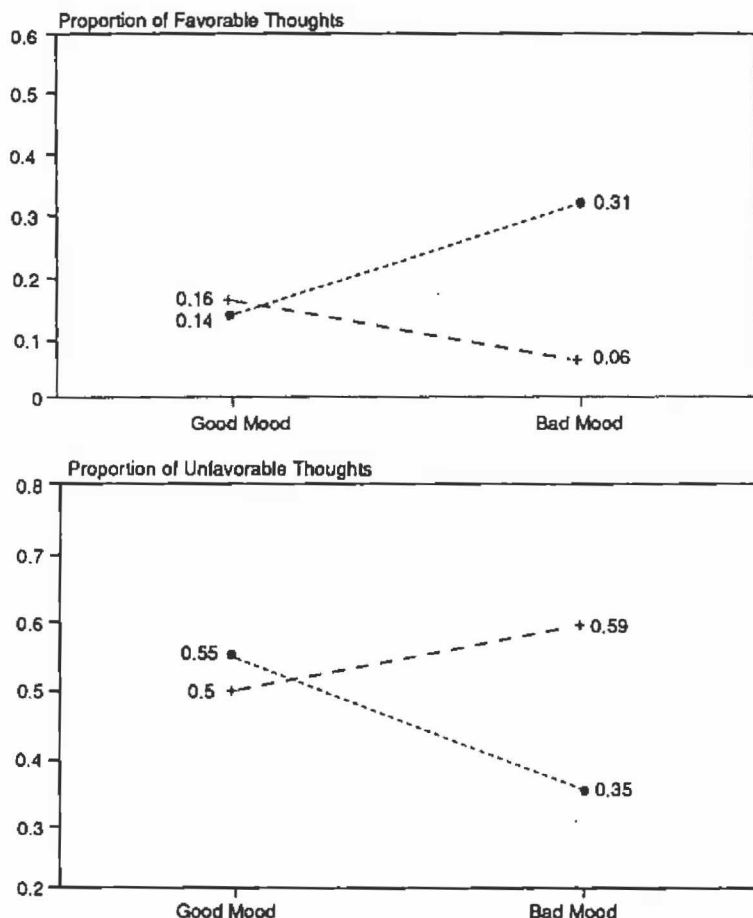


Fig. 2 Cognitive responses as a function of mood and message quality. (•····•), Strong message quality; (+---+), weak message quality.

did not do so. The interaction effects of mood and argument strength obtained in these studies are incompatible with the mood-as-peripheral-cue hypothesis and the mood-congruent-recall hypothesis. As noted before, these hypotheses predict main effects of mood rather than interaction effects of mood and message quality. Accordingly, they cannot account for the observed effects—which is not to say that they are generally invalid, an issue to which we shall return later.



Finally, the change-in-criteria hypothesis introduced above may in principle generate an interaction prediction, but cannot account for the present findings because subjects' ratings of argument quality were unaffected by their mood state.

## B. HOW CRUCIAL ARE SUBJECTS' COGNITIVE RESPONSES?

While the parallel effects on measures of attitude change and recipients' cognitive responses suggest that the impact of mood on attitude change is mediated by its impact on recipients' cognitive elaboration of the message, a more direct test of this mediating assumption would be welcome. If this assumption is correct, the observed interaction of mood and message quality should be affected by other variables that are known to influence message elaboration. According to the elaboration likelihood and the heuristic/systematic model, the amount of message elaboration is determined by the recipient's motivation and ability to process the message, and variables like distraction, personal relevance, repetition, and prior knowledge can decrease or increase message elaboration (cf. Chaiken, 1987; Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986a, 1986b). Most importantly, distraction has been shown to interfere with the systematic processing of a message. Distracted subjects are less likely to generate favorable cognitive responses in reaction to strong arguments or negative cognitive responses in reaction to weak arguments. As a consequence, distraction reduces the differential impact of strong and weak messages (cf. Petty & Brock, 1981), as has been discussed in the context of the capacity hypothesis.

Accordingly, one can test the hypothesis that the impact of mood on persuasion is mediated by its impact on subjects' cognitive responses by introducing a distraction manipulation. If subjects in a bad mood are likely to elaborate the message, introducing a distraction manipulation should eliminate the advantage of strong over weak arguments. If subjects in a good mood are not motivated, or not able, to process the content of the message to begin with, introducing a distractor task should not affect their responses.

To test this hypothesis, 75 female subjects were put in a good or bad mood, and were exposed to strong or weak arguments (Bless *et al.*, 1990, Experiment 2), replicating the procedures used in the study reported above. In addition, half of the subjects were distracted while they listened to the message. Specifically, these subjects had to solve simple computation tasks that were presented on slides while they listened to the tape. Again, the manipulation check, as described above, revealed a reliable mood difference of about one scale unit ( $M = 6.4$  and  $5.5$ , for good and bad mood conditions, respectively).

As shown in Fig. 3, the data of the nondistracted subjects replicated the

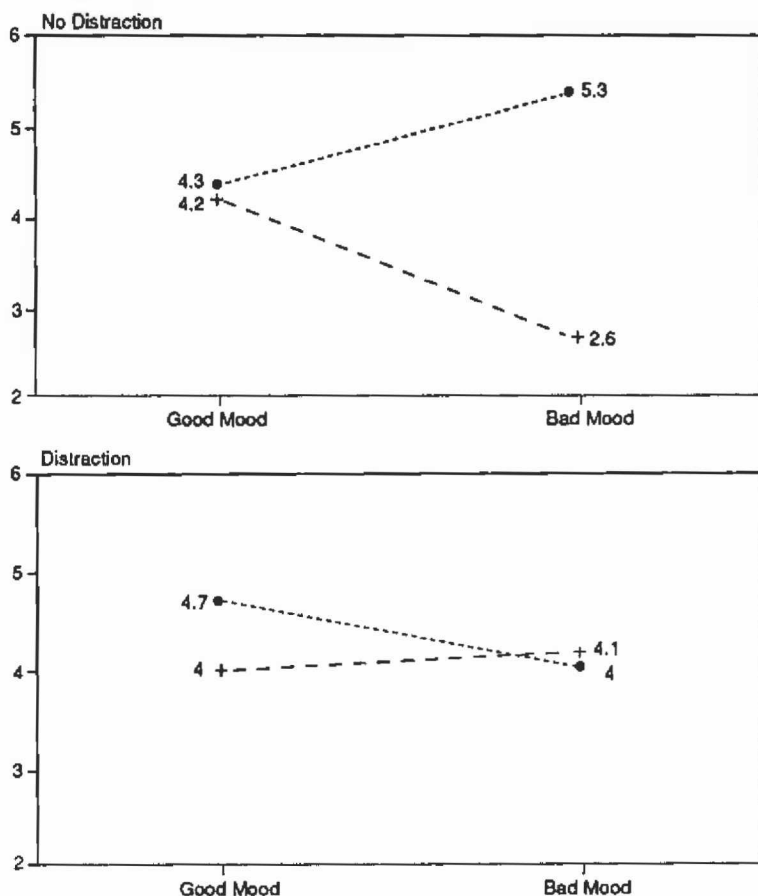


Fig. 3 Attitude change as a function of mood, message quality, and distraction. (•—•—•), Strong message quality; (+---+), weak message quality. Adapted from Bless, Bohner, Schwarz, and Strack (1990, Experiment 2).

previous findings. Again, subjects in a bad mood were persuaded by strong but not by weak arguments, whereas subjects in a good mood were moderately persuaded by both messages. However, introducing a distractor task during exposure to the message eliminated the advantage of strong over weak arguments under bad mood conditions. Subjects in a good mood, on the other hand, were not affected by the distractor task, presumably because they did not elaborate the message to begin with.

This conclusion is again supported by an analysis of subjects' cognitive responses. Separate analyses under each distraction condition indicated that non-distracted subjects in a bad mood reported a higher proportion of favorable and a smaller proportion of unfavorable thoughts in response to the strong rather than the weak arguments. However, this pattern was significantly less pronounced when bad-mood subjects were distracted than when they were not. The cognitive responses reported by subjects in a good mood, on the other hand, were not affected by the distraction manipulation, again paralleling the attitude change data.

Although the quality of the arguments affected neither attitude judgments nor cognitive responses of distracted and/or good-mood recipients, it should be noted that when explicitly asked to evaluate the quality of the arguments, subjects in all mood and distraction conditions were able to differentiate between strong and weak arguments. This finding excludes the possibility that the distraction task may have been too involving and may have inhibited any meaningful processing of the message. Moreover, by replicating previous studies (Bless *et al.*, 1990, Experiment 1; Mackie and Worth, 1989), this finding supports the idea that the formation of an attitude judgment and the perception of the quality of the arguments should be considered as being at least partly independent of each other. It seems plausible to assume that the formation of an attitude judgment requires more and deeper processing than the mere evaluation of the quality of message content.

In summary, the obtained results indicate that the impact of moods on recipients' responses to persuasive messages is mediated by their impact on respondents' elaboration of the content of the presented arguments. They are consistent with the predictions generated by the motivational hypotheses as well as by the capacity hypotheses. We shall now turn to the limited data that bear on their relative merit.

### C. DIFFERENTIAL MOTIVATION OR DIFFERENTIAL CAPACITY?

As mentioned previously, one may assume that a mood-induced lack of motivation to engage in effortful analyses of the content of the message may be overridden by other attempts to motivate recipients to pay attention to the quality of the message presented to them. Such attempts should show little effect, however, if recipients do not have the required cognitive capacity at their disposal. Conversely, giving recipients sufficient time to process the content of a message despite restricted cognitive capacity may overcome the impact of limited capacity, but may show little effect if individuals are not motivated to engage in effortful processing strategies. Three studies bear on these considerations.

In one study, part of which we already discussed (Bless *et al.*, 1990, Experiment 1), recipients' motivation to elaborate message content was independently manipulated. Half of the subjects were informed that the study was concerned with the evaluation of arguments, and they were explicitly instructed to pay attention to the arguments. The remaining subjects, on the other hand, were told that the study was concerned with language comprehension, to direct their attention to content-unrelated features of message presentation. As discussed above, and shown in Figs. 1 and 2, these latter subjects were more likely to *spontaneously* elaborate the message when they were in a bad rather than in a good mood. However, how does subjects' mood at the time of encoding influence message elaboration when subjects' are explicitly instructed to pay attention to the quality of the presented arguments? Most importantly, do subjects in a good mood engage in message elaboration under this condition? Table I shows the full

TABLE I  
ATTITUDE CHANGE AS A FUNCTION OF MOOD, MESSAGE QUALITY,  
AND FOCUS OF ATTENTION<sup>a</sup>

	Focus of attention			
	On arguments		On language	
	Good mood	Bad mood	Good mood	Bad mood
Attitude change				
Approval				
Strong arguments	5.4*	7.3*	4.6*	5.4*
Weak arguments	3.0	3.0	4.7*	3.0
Recommended fee				
Strong arguments	53.98*	59.29*	51.11	54.00*
Weak arguments	47.78	45.63	56.43*	48.75
Control group:				
Approval:	3.3			
Recommended fee:	48.44			
Cognitive responses				
Favorable thoughts				
Strong arguments	.19	.37	.14	.31
Weak arguments	.19	.15	.16	.06
Unfavorable thoughts				
Strong arguments	.48	.33	.55	.35
Weak arguments	.54	.49	.50	.59

<sup>a</sup>Means with an asterisk differ significantly from the control group at  $p < .05$ . The recommended fee is given in deutschemarks; the possible range of values for approval is 1 ("strongly disapprove") to 9 ("strongly approve"). Adapted from Bless, Bohner, Schwarz, and Strack (1990, Experiment 1).

pattern of results. As comparisons with the nonfactorial control group indicate, subjects in a good mood were influenced by strong arguments but not by weak arguments when they were *explicitly instructed* to evaluate the quality of the arguments. Without this explicit instruction, however, good mood subjects were equally influenced by strong as well as by weak argument, as discussed earlier. Subjects in a bad mood, on the other hand, were influenced by strong but not by weak arguments, irrespective of whether they were instructed to pay attention to the quality of the arguments or not. Thus, being in a bad mood seems functionally equivalent to being instructed to focus on the quality of the presented arguments, and either of these manipulations resulted in a differential impact of strong and weak arguments.

These findings bear on the hypothesis that the impact of mood states on message elaboration may be mediated by motivational factors rather than by capacity constraints. If subjects in a good mood were severely restricted in their processing capacity, simply instructing them to pay attention to the quality of the arguments should be unlikely to overcome these constraints. Note, in this regard, that the persuasive messages were presented from a tape, at a fixed speed, thus eliminating the possibility that subjects could spend more time on processing the message when instructed to pay attention to the quality of the arguments. If they were not motivated to process the message in any detail, on the other hand, despite having the necessary capacity at their disposal, increasing their motivation to do so by explicit instructions should overcome the motivational deficits, much as the above findings indicate. Accordingly, we consider these findings to support the motivational, rather than the capacity, hypothesis.

In a related vein, Innes and Ahrens (in press, Experiment 2) observed that instructing subjects "to imagine themselves in the situation of having been requested to lead a round table discussion to introduce ideas on the issue" presented in the message, eliminated the impact of being in an elated rather than a neutral mood. Specifically, elated subjects given this instruction differentiated between strong and weak arguments, whereas elated subjects who were instructed "to read the message as if they had to present an appraisal of the contents to another group for class discussion" did not. Although it remains an open issue why the first instruction increased subjects' motivation to elaborate the content of the message, whereas the second did not, the data converge with the findings of Bless *et al.* (1990, Experiment 1) by indicating that processing instructions may override the impact of affective states. Accordingly, Innes and Ahrens (in press) concluded that the impact of mood states is mediated by motivational variables rather than by decreased cognitive capacity.

However, the available evidence is mixed. In an explicit test of the cognitive capacity hypothesis, Mackie and Worth (1989) manipulated the amount of time that subjects had available for processing the message. In two experiments, with different mood inductions and different topics, a persuasive message with strong

or weak arguments was presented to subjects in a positive or a nonmanipulated mood. Half of the subjects were informed that the message would appear on a computer screen for a limited amount of time, "just long enough . . . to read the message through once" (p. 28). The other subjects were informed that they could proceed from reading the message to completing the dependent measures "whenever they were ready. Thus, these subjects were aware that they could look at the speech for as long as they wanted" (p. 29).

The authors found that offering subjects more time to process the message increased good-mood subjects' elaboration to a level that no longer differed from neutral-mood subjects' elaboration, as indicated by similar patterns of subjects' cognitive responses and attitude judgments, as well as correlations between the favorability of content-related cognitive responses and attitude change. They concluded from this pattern that good-mood subjects were apparently motivated to process the message, or else they would not have spent more time on it when they had the chance to do so. Accordingly, Mackie and Worth (1989) attributed elated subjects' limited message elaboration under restricted exposure time to limited processing capacity.

Note, however, that an alternative interpretation of these findings in terms of instructional differences is not implausible. Specifically, telling subjects that they may use as much time as they want to read the message, and may go over it again, may implicitly convey that the experimenter is interested in a carefully considered response to the message, quite in contrast to telling subjects that time is just sufficient to read the message once. If so, Mackie and Worth's (1989) unlimited exposure time condition may be similar to the explicit instruction of Bless *et al.* (1990) to pay attention to the quality of the arguments, whereas their limited exposure time condition may resemble the instruction by Bless *et al.* to focus on language comprehension. On the other hand, subjects who were instructed to pay attention to the quality of the arguments in the Bless *et al.* study may have taken more time to think about the message before they reported their attitude judgment. Although the exposure time of the tape-recorded message itself was constant across conditions, it is possible that subjects took more or less time to form a judgment, and data on this possibility are not available. Similarly, subjects in Innes and Ahrens's (in press, Experiment 2) study may have spent more time reading the persuasive message under the processing instructions that were found to reduce the impact of being in an elated mood.

In summary, additional research is needed to distinguish between the motivational and cognitive capacity hypotheses. Most importantly, this research will need to manipulate processing capacity in ways that are not open to a motivational reinterpretation. For the time being, we conclude from the finding that subjects in an elated mood were able to process the content of the message if explicitly instructed to do so, that the hypothesized constraints on processing capacity that may be induced by elated moods are unlikely to be very severe.

#### IV. Mood at the Time of Judgment

The findings reported so far indicate that recipients' affective states influence the style in which they process persuasive communications. In all reported studies, however, mood was induced directly before the message was presented and attitude judgments were assessed immediately afterward. As the messages used were all rather short, subjects' mood was probably still pronounced when attitude judgments were made. Accordingly, the impact of mood state may have occurred at the encoding stage, i.e., when subjects received the message, as well as at the judgment stage, i.e., when subjects responded to the dependent variables. Recall, however, that different process assumptions make different predictions about the processing stage at which recipients' affective state is likely to affect the persuasive impact of the message, as discussed in the introduction. An evaluation of their relative merit does therefore require separate explorations of the impact of mood states at the encoding as well as the judgment stage.

To address this issue, Bless and Schwarz (Bless *et al.*, 1991, Experiment 1) conducted a study in which a positive or negative mood was induced either before encoding or after encoding but before judgment. The mood induction was identical to the one used in the Bless *et al.* (1990) studies described above, with significant differences of about two scale units on the manipulation check. Subjects were exposed to the strong or weak counterattitudinal messages used in the Bless *et al.* (1990) studies under instructions that were designed to prevent subjects from forming online judgments.<sup>2</sup> Attitude judgments were assessed after a delay of 15 minutes, so that positive or negative mood could be induced either before the message was presented or before attitude judgments were made. Moreover, this delay guaranteed that the mood that was induced before message presentation had dissipated by the time the attitude judgment was made.

When good or bad moods were induced before the message was presented, the results replicated the previously reported findings: As shown in Table II, differential effects of strong versus weak arguments were obtained for subjects in a bad mood, but not for subjects in a good mood. As the confound of mood and processing stage common to the previous studies was avoided, these results indicate that the impact of mood on recipients' encoding of the presented message is sufficient to obtain an interaction of mood and argument quality.

However, the impact of subjects' mood was not restricted to the encoding stage. Rather, mood effects on subjects' processing strategy could also be ob-

<sup>2</sup>Specifically, the cover story informed subjects that various texts were being pretested for a study on "language comprehension," and a number of questions was presented that focused on various linguistic aspects of the message. These instructions were all intended to prevent subjects from making attitudinal judgments during encoding of the message by directing their attention to the form rather than the content of the communication.

TABLE II  
ATTITUDE CHANGE AS A FUNCTION OF MOOD, TIMING OF MOOD  
INDUCTION, AND ARGUMENT QUALITY<sup>a</sup>

	Timing of mood induction			
	Before encoding		Before judgment	
	Positive mood	Negative mood	Positive mood	Negative mood
Approval				
Strong arguments	3.6	4.1	5.2	3.8
Weak arguments	3.4	1.9	1.6	2.3
Recommended fee				
Strong arguments	48.50	54.29	54.33	50.50
Weak arguments	50.56	49.38	46.50	48.30

<sup>a</sup>The possible range of values for approval is 1 ("strongly disapprove") to 9 ("strongly approve"). The recommended fee is given in deutsche marks. Adapted from Bless, Mackie, and Schwarz (1991, Experiment 1).

served at the judgment stage. If subjects were exposed to the message in a neutral mood, but positive or negative moods were induced before the attitude judgments were made, the interaction of mood and message quality showed a reversed pattern. Although all subjects were affected by the quality of the arguments, this effect was significantly more pronounced for subjects in a *good* mood, who reported more extreme judgments than subjects in a *bad* mood.

We assume that this pattern of results again indicates that subjects in a good mood simplified their processing task. Specifically, subjects who were in a good mood at the time of judgment may have been less likely to recall detailed representations of the presented arguments than subjects who were in a bad mood. Rather, they may have relied on a global evaluative representation, such as "These were pretty good arguments," in forming an attitude judgment. If subjects in a bad mood, on the other hand, tended to use detail-oriented processing strategies, they may have recalled more of the presented information, including arguments that were less convincing. If so, the present findings would parallel previous research, conducted in other content domains, that indicated that simplifications of judgmental processes, due to suboptimal information (Linville, 1982) or insufficient processing time (Strack, Erber, & Wicklund, 1982), may result in more extreme judgments. Most important, Linville & Jones (1980) observed that subjects provided more extreme judgments the less information about the target was available. Linville suggested that the likelihood of extreme judgments may decrease the more information is considered in making the judg-



ment, reflecting that a wider range of information may draw attention to different implications. Similarly, Strack *et al.* (1982) observed greater reliance on a single piece of salient information under time pressure, again resulting in more extreme judgments. Thus, the extremity of judgments may decrease when individuals consider a wider range of detailed information with potentially different implications. If so, the above findings may reflect that recipients' mood state influenced the amount of information that they considered in making a judgment.

To provide a direct test of this hypothesis, Bless and Mackie (see Bless *et al.*, in press, Experiment 2) conducted a study in which subjects were induced to form either a global or a detailed representation of the persuasive message presented to them. As in the previous studies, subjects received a counterattitudinal communication that presented either strong or weak arguments, again under instructions designed to prevent online attitude judgments. Subsequently, half of the subjects were required to evaluate the perceived quality of the arguments, whereas the remaining subjects were asked to indicate the number of *different* arguments presented to them. Whereas the first task was designed to form a global evaluative representation, the second task was designed to form a more differentiated, detail-oriented representation. In fact, forming this more detailed representation took subjects almost twice as long as simply judging the perceived quality of the arguments.

Following this task, subjects were put in a good, neutral, or bad mood and were asked to report their attitudes on the issue. Specifically, subjects in whom positive mood was to be induced watched a 5-minute video clip taken from the television comedy show "Saturday Night Live," whereas subjects assigned to the neutral mood condition watched a 5-minute segment on wine corking. Subjects assigned to the negative mood condition saw a 5-minute video report on a summer camp for children with cancer. Manipulation checks revealed a significant impact of these manipulations on subjects' mood, with means of  $M = 7.2$ , 6.0, and 4.1, for the positive, neutral, and negative conditions, respectively, along a scale with endpoints labeled "sad" (1) and "happy" (9).

The results provide strong support for the hypothesis that subjects in good and bad moods rely on different representations of the message, as shown in Table III. If subjects had previously formed a global evaluative representation of the message, the differential impact of strong and weak arguments was *more* pronounced for subjects in a good or a neutral mood, than for subjects in a bad mood. This indicates that subjects in a positive or neutral mood were more likely to use global representations, which have been demonstrated to lead to more extreme judgments than more detailed representations (Judd & Lusk, 1984; Large & Vega, 1989; Linville & Jones, 1980). Subjects in a bad mood, on the other hand, were apparently less likely to rely on a global representation, even though it was easily accessible.

If no global representation of the content of the message had previously been

TABLE III  
ATTITUDE CHANGE AS A FUNCTION OF MOOD, TYPE OF REPRESENTATION,  
AND ARGUMENT QUALITY<sup>a</sup>

	Type of representation			
	Summary		Detail	
	Strong argument quality	Weak argument quality	Strong argument quality	Weak argument quality
Agreement				
Positive mood	5.9	3.2	3.9	4.1
Neutral mood	6.0	3.8	4.3	3.2
Negative mood	4.5	3.5	4.1	3.1

<sup>a</sup>The possible range of values for agreement is 1 ("strongly disagree") to 9 ("strongly agree"). Adapted from Bless, Mackie, and Schwarz (1991, Experiment 2).

formed, however, the differential impact of strong and weak arguments was *less* pronounced for subjects in a good mood than for subjects in a neutral or in a bad mood. This indicates that subjects in a bad or a neutral mood were more likely to engage in careful processing of a more detailed representation than subjects in a good mood. Apparently, the latter subjects formed their judgment by using some other heuristic. One simple cue that they may have used is the number of different arguments presented (Petty & Cacioppo, 1984a), although the data do not allow us to evaluate this possibility.

In summary, subjects in a neutral mood used either a global or a detailed representation, depending on which was more accessible. Subjects in a good mood, however, preferred a global representation, and made less use of a more detailed one, even if easily available. Conversely, subjects in a bad mood preferred a more detailed representation, and made less use of a global one, even if easily available.

In combination, the reported findings demonstrate that the influence of affective states on the processing of persuasive communications is not restricted to a specific processing stage. Rather, elated moods foster the use of simplified processing strategies, and depressed moods the use of more effortful, detail-oriented processing strategies, both at the encoding stage and at the judgment stage. Depending on the processing stage at which mood has its impact, however, these strategies result in markedly different effects of strong and weak arguments. At the encoding stage, the advantage of strong over weak arguments is increased if recipients are in a bad mood, but decreased if they are in a good mood. Conversely, at the judgment stage, the advantage of strong over weak

arguments is increased if recipients are in a good mood, but decreased if they are in a bad mood. Both of these diverging impacts, however, reflect the operation of the same general influence of affective states on individuals' preferred processing strategy.

### V. Mood and the Impact of Peripheral Cues

The finding that subjects in a good mood relied more on a global representation of the message than did subjects in a bad mood (Bless *et al.*, in press, Experiment 2) is compatible with the general assumption that reliance on simple cues will increase as the systematic elaboration of message content decreases. This assumption follows from the elaboration likelihood model (ELM), which postulates a "tradeoff between argument elaboration and the operation of peripheral cues" (Petty & Cacioppo, 1986b, p. 21; see Petty & Cacioppo, 1984b, for a more detailed discussion). In the related "heuristic-systematic model of persuasion" (HSM) (Chaiken, 1987; Chaiken *et al.*, 1989), such a trade-off has been discussed as the "attenuation hypothesis" (Chaiken *et al.*, 1989, p. 220).

According to this model, however, systematic and heuristic processing may also occur simultaneously under certain conditions. Specifically, if motivation to process is high, the impact of heuristic (or "peripheral") cues is assumed to be enhanced when systematic (or "central") processing alone does not provide the person with sufficient information to assess the validity of the message. This may be due to either personal (e.g., high need for cognition) or situational factors (e.g., if the content is insufficient to form a judgment; see Chaiken *et al.*, 1989, p. 226). In either case, individuals may consider the content of the message and peripheral cues (such as the expertise of the communicator) in combination to assess the validity of the message.

If one assumes that being in a negative mood increases the motivation to use effortful, detail-oriented processing strategies, whereas being in a positive mood increases the likelihood of simplifying processing strategies, different predictions about the impact of mood states on the processing of noncontent cues may be derived, depending on several factors. Suppose that the content of the message is sufficient to evaluate its validity, but that reliance on peripheral cues allows a reduction in cognitive effort and that a relevant heuristic is easily accessible to make sense of the implications of the peripheral cues (Chaiken, 1987; Chaiken *et al.*, 1989). If so, we may expect that individuals in a positive mood will be likely to rely on peripheral cues, at the expense of message elaboration. In contrast, individuals in a negative mood should be likely to engage in message elaboration, and may pay little attention to peripheral cues, given that they can evaluate the message on the basis of its content.

Suppose, however, that the content of the message is *not* sufficient to evaluate its validity. If so, individuals in a *negative* mood may be particularly likely to turn to peripheral cues as an *additional* source of information in their attempt to evaluate the validity of the message. Thus, negative moods may in fact increase the processing of noncontent cues, as part of a detail-oriented and exhaustive processing strategy, if the content of the message seems insufficient to form a judgment. We shall now review the limited empirical evidence that bears on these hypotheses.

In two studies, Mackie and Worth (1989, Experiment 2; Worth & Mackie, 1987) explicitly manipulated source expertise independently of argument strength and subjects' mood. As predicted by the ELM, as well as the HSM's attenuation hypothesis, positive mood subjects tended to base their attitude judgments more on the expertise cue than did neutral mood subjects. However, the obtained impact of source expertise was small and only marginally significant. In our reading, there are two plausible reasons that may account for the failure to detect the clear-cut mood effects on cue reliance that the attenuation hypothesis would predict.

First, the salience of the expertise cue may have been low, relative to the salience of the presented arguments. Specifically, subjects received a short description of the source, pertaining to its expertise, before a message with eight (Mackie & Worth, 1989, Experiment 2) or nine (Worth & Mackie, 1987) arguments was presented. It is conceivable that the single piece of information on source expertise was not easily accessible after the presentation of the arguments. Consistent with this possibility, Mackie and Worth (1989, p. 34) reported that subjects' judgments of source expertise were more strongly influenced by argument strength than by the expertise manipulation.

Second, and more important, Chaiken and colleagues suggested that peripheral cues, such as source expertise, may not affect attitude judgments unless a relevant heuristic (e.g., "experts can be trusted") is easily accessible at the time of judgment (Chaiken, 1987; Chaiken *et al.*, 1989). If so, it may be important that the cues provided to recipients match the heuristic that is suggested by the purported rationale of the study. In retrospect, this may not have been the case in the studies by Mackie and Worth. Specifically, their subjects were instructed to pay attention to "how delegates represent the views of their constituents at conferences." It is conceivable that these instructions increased the accessibility of heuristics that pertained to presentation style rather than source expertise. If so, good-mood subjects may have used peripheral cues other than the one that was explicitly manipulated, resulting in the surprisingly low impact of the source expertise manipulation.

In contrast to this suggestive evidence for an increased impact of peripheral cues under *elated* moods, Böhner, Crow, Erb, and Schwarz (in press) observed an increased impact of peripheral cues under *depressed* moods, when a highly

salient consensus cue was presented in combination with only one piece of content information. In their study, 64 subjects were run in individual sessions and received positive or negative feedback on a bogus "Vocational Aptitude Test," resulting in a reliable mood difference ( $M = 6.5$  and  $4.8$ , for good and bad mood conditions, respectively, along a scale from  $1 =$  "very bad" to  $9 =$  "very good"). Following this mood manipulation, each subject was left alone in the hall, waiting for another study, to begin a few minutes later. Shortly after the experimenter had left the subject alone, he or she was approached by a female confederate who was unaware of the subject's mood condition. The confederate wore a name tag that identified her as a member of a (fictitious) local organization supporting disabled students. She greeted the subject and asked him or her to donate some money to her organization, which would be used to increase the accessibility of university buildings through wheelchair ramps (high argument quality), or to establish a separate library for disabled students (low argument quality). Simultaneously, she showed the subject a sheet with the heading "List of Contributors," which contained 2 (weak consensus cue) or 19 names (strong consensus cue). Thus, the study provided orthogonal manipulations of subjects' mood, message quality, and strength of the peripheral cue.

The key dependent variables were subjects' willingness to donate and the amount of money donated. After the confederate left, subjects were informed that the collection of money constituted the second, independent experiment for which they had been waiting, and were asked to list their cognitive responses, to rate the usefulness of the alleged cause of the donation, and to list any details of the situation that they could remember.

Table IV shows the percentages of subjects who donated, along with the means of the amount donated.<sup>3</sup> When a weak consensus cue was presented, the willingness to donate was significantly influenced by message quality for subjects in a bad mood, but not for subjects in a good mood, resulting in a significant simple interaction of mood and message quality, which again replicates the previous findings. The amount of money donated showed a parallel, although nonsignificant, pattern. More important, however, presentation of a strong consensus cue influenced only subjects who were in a bad mood, but not subjects who were in a good mood. Specifically, subjects in a bad mood were more willing to donate, and gave more money, when a strong rather than a weak cue was presented. In contrast, no significant impact of cue strength emerged for subjects in a good mood.

Analyses of subjects' cognitive responses and their evaluation of the collection's usefulness revealed patterns that paralleled the behavioral data reported in

<sup>3</sup>Each subject had at least DM 5 available to donate, because this amount (approximately \$3 at the exchange rate of the time), in small change, had been paid for participation at the beginning of the alleged first experiment.

TABLE IV  
PERCENTAGE OF DONORS AND AMOUNT DONATED AS A FUNCTION OF  
MOOD, STRENGTH OF CONSENSUS CUE, AND ARGUMENT QUALITY<sup>a</sup>

	Strength of consensus cue			
	Strong		Weak	
	Positive mood	Negative mood	Positive mood	Negative mood
Percentage of donors				
Strong arguments	88	88	100	88
Weak arguments	75	88	100	25
Amount donated				
Strong arguments	1.94	2.34	2.25	1.75
Weak arguments	2.16	2.67	2.30	0.50

<sup>a</sup>The amount donated is given in deutsche marks. Adapted from Böhner, Crow, Erb, and Schwarz (in press).

Table IV. In addition, the recall data suggested that subjects in a bad mood recalled more details of the persuasive situation than did subjects in a good mood, indicating more extensive processing of both content and noncontent information under negative mood.

In summary, subjects in a bad mood were affected by both message quality and the strength of a noncontent cue, and this influence was reflected in their cognitive responses and their overt behavior. In contrast, subjects in a good mood were neither influenced by variations in message quality nor by peripheral cues. Thus, the results of this study (Böhner *et al.*, in press) apparently contradict the findings reported by Mackie and Worth (1989, Experiment 2; Worth & Mackie, 1987), reviewed above. However, both sets of findings seem compatible if one takes the HSM's "sufficiency criterion" (Chaiken *et al.*, 1989) into account. According to that criterion, recipients may consider peripheral cues as an additional source of information if the content of the message is insufficient to evaluate its validity. If so, the impact of peripheral cues should reflect an interaction of message quality, bearing on the sufficiency criterion, and recipients' mood. Specifically, being in a bad mood may increase systematic processing of all potentially available information. If the content of the message alone is sufficient to form a judgment, the attitude judgments and behavioral decisions of individuals who are in a bad mood are likely to reflect their elaboration of message content. If the content of the message is insufficient, however—for example, because very few arguments are presented to begin with—recipients

who are in a bad mood may use noncontent cues as an additional source of information to arrive at a judgment. Individuals in a good mood, on the other hand, may be willing to use simple decision rules based on heuristic cues. Moreover, they may be particularly likely to do so if the judgmental task seems complex, as is the case, for example, when numerous different arguments are presented. This raises the intriguing possibility that the impact of peripheral cues decreases with message complexity for recipients who are in a bad mood, but increases with message complexity for recipients who are in a good mood.

While the available data (Bohner *et al.*, in press; Mackie & Worth, 1989, Experiment 2; Worth & Mackie, 1987) are consistent with the hypotheses offered above, a more stringent test would be welcome. To provide this test, future studies should include orthogonal manipulations of the number of message arguments and the presentation of peripheral cues. If our reasoning is correct, the direction of the interaction between mood and peripheral cues should directly depend on the amount of content information presented in the message.

## VI. Theoretical Implications

We began this article by introducing a number of different ways by which recipients' mood states may influence the impact of persuasive messages. We shall now turn to an evaluation of these possibilities and shall finally discuss the implications of the present findings for current models of affective influences on cognitive processes, broadly conceived.

### A. MOOD AND PERSUASION

#### *1. Evaluation of Hypotheses*

The studies reviewed in the present article most clearly support the notion that recipients' affective states may influence the extent of argument processing. In line with previous suggestions about the impact of affective states on individuals' strategies of information processing (Schwarz, 1990), individuals in an elated mood were found to be less likely to engage in extensive processing of the presented arguments than individuals in a nonmanipulated or a mildly depressed mood. Accordingly, all studies showed significant interaction effects of recipients' mood states and the quality of the arguments presented to them. Moreover, these effects emerged under conditions that may be considered to reflect moderate elaboration, and were eliminated under conditions of decreased or increased

elaboration. Thus, decreasing the amount of elaboration by a distractor task (Bless *et al.*, 1990, Experiment 2), as well as increasing the amount of elaboration by instructing subjects to pay attention to the arguments (Bless *et al.*, 1990, Experiment 1) or by providing additional time for processing (Mackie and Worth, 1989), eliminated the effects of mood on the amount of processing. However, neither under decreased nor under increased elaboration conditions did we observe evidence for mood effects that could *not* be attributed to mood's impact on message elaboration, contrary to some of the hypotheses we derived from the literature.

To begin with the *change-in-criteria* hypothesis, the presented findings did not support the notion that recipients in a bad mood may be more critical of any message presented to them than recipients in a good mood. While recipients in a bad mood did engage in a more critical examination of the presented arguments, they did appreciate the quality of strong arguments and were *more* influenced by them than were recipients in a good mood. Moreover, when recipients were explicitly asked to rate the quality of the presented arguments, their ratings did *not* differ as a function of their mood state (Bless *et al.*, 1990, Experiment 1). Accordingly, we found no support for the folk wisdom that people in a bad mood are more likely to react negatively to just about anything, whereas people in a good mood may be generally uncritical. Rather, our findings suggest that individuals evaluate argument quality independently of their mood state, provided that their attention is drawn to the issue, contrary to what the change-in-criteria hypothesis would suggest. However, individuals in different mood states seem to differ in the extent to which they spontaneously elaborate the implications of the message and use these elaborations as a basis for their attitude judgments. As a result we find that individuals in a bad mood are not generally less likely to be influenced—they are only less likely to be influenced by poor arguments.

Similarly, we found no support for the *mood-congruent-recall* hypothesis, which holds that recipients' mood may influence the valence of the thoughts that they generate in response to the persuasive message or the communicator. Note, however, that mood congruent recall may be most likely for strongly valenced self-related material (cf. Blaney, 1986). If so, support for the hypothesis may be detected in content domains that are more clearly self-related, e.g., pertaining to the quality of recipients' marriage or to recipients' self-concept.

With regard to the *feelings-as-information* hypothesis, the findings are less conclusive. This hypothesis holds that individuals may use their perceived affective reaction to the attitude object, or to the communicator, in making a judgment according to a "How do I feel about it?" heuristic (Schwarz & Clore, 1988). In doing so, they may misread their preexisting mood state as a reaction to features of the persuasive situation, resulting in more favorable judgments when they are in a good rather than in a bad mood, unless the informational value of their current feelings is discredited (e.g., Schwarz & Clore, 1983). Although these



predictions received considerable support in experiments that assessed complex judgments (see Schwarz, 1990; Schwarz & Clore, 1988, for reviews), the predicted main effect of mood did not emerge in the present persuasion experiments. Moreover, differences in recipients' attitude judgments were accompanied by parallel differences in their cognitive responses, contrary to the predictions made by the feelings-as-information assumption.

Note, however, that the quality of the presented arguments affected recipients' attitude judgments and cognitive responses only when they were in a bad mood, but not when they were in a good mood at the time of message exposure. This raises the question, on which basis, other than message quality, recipients in a good mood may have formed their attitude judgment? It is conceivable that these subjects did in fact consult their feelings in making an attitude judgment, resulting in similarly positive judgments irrespective of message quality. Obviously, additional experiments that manipulate the perceived informational value of recipients' mood by introducing misattribution manipulations are needed to provide an adequate test of this hypothesis. In general, however, this possibility is nicely compatible with the theoretical assumptions made. If individuals in a good mood attempt to simplify the judgmental process, reliance on the "How do I feel about it?" heuristic would provide an efficient way to do so. Moreover, they should be the more likely to use this heuristic the less other easily accessible information allows them to form a judgment without too much effort.

In line with this assumption, we observed that recipients did not differentiate between strong and weak messages when they were in a good mood at the time of encoding. However, their attitude judgments clearly reflected message quality when they had formed a simple evaluative representation of the message while in a neutral mood, but had to form an attitude judgment while in a good mood. We offer the conjecture that this pattern of findings reflects that elated subjects based their attitude judgment on the informational implications of their feelings, unless they had the even simpler opportunity to recall a previously formed global evaluation of the message.

In addition, the present findings suggest an alternative interpretation for a previous study that has been interpreted as supporting the operation of the "How do I feel about it?" heuristic in a persuasion context. Specifically, Schwarz, Servay, and Kumpf (1985) exposed heavy smokers to a fear-arousing movie that vividly portrayed the negative side effects of smoking. Relative to a control group that was not exposed to the movie, subjects who saw the movie reported a higher intention to cut down the number of cigarettes smoked. This intention was less pronounced, however, when subjects could misattribute their affective reactions to a placebo pill that was said to have arousing side effects. Subjects who were informed that the pill had tranquilizing side effects, on the other hand, reported a higher intention to reduce smoking than did subjects who had not expected side effects from the pill.

These discounting and augmentation effects (Kelley, 1972) were interpreted to indicate that subjects used their affective reactions to the movie as a basis for evaluating the described risk, resulting in the perception of the highest risk when they experienced arousal "despite" being tranquilized, and in the perception of the lowest risk when they could attribute their arousal to the pill. In light of the present theorizing, one may alternatively assume that recipients' feelings of fear prompted them to elaborate the strong arguments presented in the fear-arousing movie, but that the impact of their feelings on message elaboration was cut short when they misattributed their feelings to another source. Specifically, subjects who attributed their arousal to the side effects of the pill may have seen little reason to elaborate the message (and may instead have been thinking about the risks involved in taking pills). If so, the obtained results would reflect the use of one's affective state as a basis for making decisions about which information to attend to, rather than as a basis for evaluating the described risk per se.

In retrospect, the Schwarz *et al.* (1985) study nicely illustrates the shortcomings of studies that use only one level of message quality. Specifically, affective influences that are mediated by their impact on message elaboration can only be distinguished from other mediating processes if at least two levels of message quality are introduced. In the present case, the feelings-as-information hypotheses advanced by Schwarz *et al.* (1985) would predict effects of fear and its perceived cause that are independent of message quality, whereas the fear-induced-elaboration hypothesis considered here would predict an interaction of this factor with message quality. The same methodological point holds for the other hypotheses considered here. For example, had we constrained ourselves to the use of weak arguments in the studies reported in this article, the obtained results would have been equally compatible with the change-in-criteria or mood-congruent-recall hypotheses as with the mood-induced-elaboration assumption.

## 2. Music, Food, and Pleasant Circumstances

The same methodological issue renders it difficult to determine the applicability of the present analysis to the large body of research that explored the impact of music, food, or other pleasant situational influences on recipients' yielding to persuasive messages. For example, Janis, Kaye, and Kirshner (1965; see also Dabbs & Janis, 1965) observed more pronounced attitude change when recipients were eating while reading a persuasive communication than when they were not, whereas Galizio and Hendrick (1972) found a similar impact of pleasant music (see also Gorn, 1982; Milliman, 1982, 1986). In a related vein, Rosnow (1968; see also Corrozi & Rosnow, 1968) reported that exposure to rewarding or punishing events influenced the effectiveness of two-sided persuasive communications. Unfortunately, these and related studies were typically restricted to the use of a single level of message quality. Their findings may

therefore be interpreted in a conditioning framework (which was preferred by most of these authors), or may be construed to reflect the impact of affective states on processing style. Specifically, if we assume that the presented arguments were not very strong, the observation that exposure to pleasant stimuli increased persuasion relative to control conditions would parallel the findings reviewed in the present article. In fact, Dabbs and Janis's (1965) suggestion that pleasant activities may create a momentary "mood of compliance" is nicely compatible with the more process-oriented account offered here.

Alternatively, however, we may construe the same findings as reflecting the use of the "How do I feel about it?" heuristic (Schwarz & Clore, 1988). In line with this latter hypothesis, Gorn, Goldberg, and Basu (1990) observed that exposure to pleasant or unpleasant music influenced subjects' evaluation of a consumer product only under conditions where their attention was *not* drawn to the nature of the music. When subjects were explicitly asked to evaluate the music before evaluating the consumer product, however, the latter judgments were unaffected by the type of music presented. As Gorn *et al.* (1990) note, this may reflect that drawing subjects' attention to the potential impact of the music may have discredited their current feelings as a basis of judgment, much as suggested by Schwarz and Clore (1983, 1988). In fact, differences in subjects' awareness of the source of their feelings may underlie the apparently conflicting results obtained in studies concerned with the impact of background music on consumer behavior (see Gorn, 1982; Kellaris & Cox, 1989; Milliman, 1982, 1986).

As this discussion indicates, it is impossible to determine the mechanism that underlies an observed impact of pleasant stimulation on attitude change in the absence of experimental conditions that include variations of message quality. Accordingly, the design of future research in this area will need to reflect the potential complexity of higher order interactions identified in this article.

### *3. Applied Implications*

Turning to the applied implications of the reviewed research, we note that putting recipients in a good mood when we want to influence them may not always be a good idea. Specifically, when we have strong arguments to present in favor of our case, recipients' good mood may reduce their impact by interfering with recipients' systematic elaboration of the message. This interference is particularly undesirable because attitude change via a central route of persuasion has been found to be more stable than attitude change via a peripheral route (cf. Petty & Cacioppo, 1986b). Accordingly, strong arguments are likely to be more persuasive, and the induced attitude change is likely to be more resistant to change, when the arguments are delivered to an audience that is in a neutral or mildly depressed mood. Weak arguments, on the other hand, are more effective

when recipients do not elaborate them. Therefore, if we have nothing compelling to say, putting the audience in a good mood may be a smart choice—much as many advertisers seem to have known for quite a while (cf. Stayman, Aaker, & Bruzzone's, 1989, content analysis of television spots).

## B. AFFECT AND INFORMATION PROCESSING

### *1. Informational and Motivational Functions of Affective States*

In a broader theoretical context, the present findings illustrate that individuals' affective states may have a strong impact on the strategies that they use to process information. As a growing body of literature indicates (see Fiedler, 1988; Schwarz, 1990; Schwarz & Bless, 1991, for reviews), individuals' cognitive performance on a wide variety of tasks may be profoundly influenced by the affective state they are in. These influences may be conceptualized by assuming that affective states may serve informative functions (see Schwarz, 1990; Schwarz & Bless, 1991, for a more detailed discussion). As many authors pointed out (e.g., Arnold, 1960; Frijda, 1988; Higgins, 1987; Ortony, Clore, & Collins, 1988), different affective states are closely linked to different psychological situations. In Frijda's (1988) words, "emotions arise in response to the meaning structures of given situations, [and] different emotions arise in response to different meaning structures." In general, "events that satisfy the individual's goals, or promise to do so, yield positive emotions; events that harm or threaten the individual's concerns lead to negative emotions" (p. 349).

For the purpose of the present argument, we assume that the relationship between emotions and the "meaning structures" that constitute a "psychological situation" (Higgins, 1987) is bidirectional: While different psychological situations result in different emotions, the presence of a certain emotion also informs the individual about the nature of its current psychological situation. At a general level, we may assume that a positive affective state informs the individual that the world is a safe place that does not threaten the person's current goals. That is, positive feelings tell us that our current situation is neither characterized by a lack of positive outcomes, nor by a threat of negative outcomes. Negative affective states, on the other hand, inform the individual that the current situation is problematic, and that it is characterized either by a lack of positive outcomes, or by a threat of negative outcomes. If so, one's affective state could serve as a simple but highly salient indicator of the nature of the situation one is in. Indeed, empirical evidence indicates that different emotions are associated with different states of "action readiness" that are evident in physiological changes (e.g., Lacey & Lacey, 1970; Obrist, 1981) and overt

behavior (e.g., Ekman, 1982; Izard, 1977), as well as in introspective reports (e.g., Davitz, 1969; Frijda, 1986, 1988). Accordingly, many theories of emotion hold that "emotions exist for the sake of signaling states of the world that have to be responded to, or that no longer need response and action" (Frijda, 1988, p. 354).

These considerations suggest that individuals' processing strategies may be tuned to meet the requirements of the psychological situation that is reflected in their feelings. If negative affective states inform the individual about a lack of positive, or a threat of negative, outcomes, the individual may be motivated to change his or her current situation. Attempts to change the situation, however, initially require a careful assessment of the features of the current situation, an analysis of their causal links, and explorations of possible mechanisms of change and their potential outcomes (cf. Bohner *et al.*, 1988). Accordingly, it would be highly adaptive if negative feelings increased the cognitive accessibility of procedural knowledge that is adequate for handling negative situations. Increased accessibility of this procedural knowledge, however, would also increase the likelihood that the respective procedures are applied to other tasks that one works on while in a bad mood, resulting in a generalized use of analytic reasoning procedures under bad mood when they are applicable (cf. Higgins, 1989). Moreover, individuals may be unlikely to take risks in a situation that is already considered problematic, and may therefore avoid simple heuristics as well as novel solutions. Accordingly, their thought processes may be characterized by what Fiedler (1988) called "tightening," a term borrowed from Kelly (1955).

If positive feelings inform the individual that his or her personal world is currently a safe place, on the other hand, the individual may see little need to engage in cognitive effort, *unless* this is required by other currently active goals. In pursuing these goals, the individual may also be willing to take some risk, given that the general situation is considered safe. Thus, simple heuristics may be preferred to more effortful, detail-oriented judgmental strategies; new procedures and possibilities may be explored; and unusual, creative associations may be elaborated. Moreover, a diverse body of procedural knowledge may be equally accessible, given that no specific procedure was activated to deal with a problematic situation, further increasing the potential for unusual solutions. Accordingly, the thought processes of individuals in a positive affective state may be characterized by what Fiedler (1988) has called "loosening."

## 2. Some Limiting Conditions

These conjectures predict numerous mood-induced differences in processing style, for which considerable support can be found in a diverse body of literature (see Schwarz, 1990, for a review and discussion). It is important, however, to consider a number of limiting conditions. First, the increase in analytic perfor-

mance under the influence of a bad mood may be limited by the extent to which handling the negative situation itself binds a considerable degree of subjects' cognitive capacity, thus restricting the individual's capacity to work on an unrelated task. The underlying assumption that negative states may have a disruptive impact on information processing has a long tradition in psychological theorizing (see Easterbrook, 1959, for an early review). In the persuasion domain, it is reflected in findings that indicate a disruptive effect of pronounced temporary or chronic fear on the processing of persuasive messages (see Jepson & Chaiken, 1990). Moreover, any potential advantage of different processing styles cannot be observed if individuals are not motivated to work on a task to begin with, as is frequently the case under severe depression. Accordingly, the literature on depressive realism (see Ruchlman, West, & Pasahow, 1985, for a review) suggests that severe depression, in contrast to being in a "depressed mood," is *unlikely* to improve analytic performance. It is interesting to note, however, that phenomenological studies of the subjective experience of severe depression (see Tölle, 1982, for a review) indicate that the experience of "sadness" or of "being in a bad mood" is *not* part of the melancholic state that characterizes severe depression. Thus, the subjective experiences that accompany severe depression may be of a different nature than the "normal" negative affective states considered in the present article. Moreover, the experiences associated with severe depression are likely to endure over extended periods of time with limited variation, and may therefore lose whatever informational value they may have had at their onset.

Finally, other currently active goals (cf. Srull & Wyer, 1986) may override the impact of affective states, as has been demonstrated in the Bless *et al.* (1990, Experiment 1) study reviewed above. Note, however, that the present argument implies that it should be easier to induce individuals in a good mood to use an analytic processing style than to induce individuals in a bad mood to use a heuristic style. If positive feelings inform us that no action is needed, overriding this message due to other action requirements poses no problem. In contrast, if negative feelings inform us about current problems, ignoring this message would not be adaptive. Accordingly, one may expect that the impact of negative feelings on processing style is more immune to the influence of other variables than is the impact of positive feelings. Obviously, future research should address these plausible limitations.

For the time being, however, we note that the informative functions approach to the interplay of affect and cognition (Schwarz, 1990; Schwarz & Bless, 1991; Schwarz & Böhner, 1990) provides a heuristically fruitful framework for conceptualizing the impact of affective states on individuals' spontaneous use of processing strategies. Most important, the basic assumption that affective states may serve informative functions is clearly in line with a long tradition of theoriz-

ing about the nature of emotions (see Frijda, 1986, 1988, for reviews), and it invites an explicit consideration of what the specific information is that may be provided by different moods and emotions. One may expect that current explorations of the conditions that give rise to different emotions (e.g., Higgins, 1987; Oatley & Johnson-Laird, 1987; Ortony *et al.*, 1988; Weiner, 1985), as well as research on people's knowledge about their emotions (e.g., Stein & Levine, 1987), will result in a more precise understanding of their respective informational value. In principle, one may assume that affect-elicited cognitive tuning is the more functional for an organism, the more closely different types of emotions correspond to different situational requirements. If so, future insights into situational determinants of emotions are likely to allow more precise specifications of the processing requirements that are signaled by different affective states, providing a theoretical basis for more specific predictions about the impact of different moods and emotions on strategies of information processing.

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